



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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March 27, 2018

To: Interested Parties

From: Scott Voss, Supervisory Fish Biologist, Red Bluff Fish and Wildlife Office

Subject: Biweekly report (March 12, 2018 - March 25, 2018)

Please find attached preliminary daily estimates of passage, 90% confidence intervals, and fork length ranges of unmarked juvenile salmonids sampled at Red Bluff Diversion Dam for the period March 12, 2018 through March 25, 2018. Race designation was assigned using length-at-date criteria.

This report also contains graphical displays of salmonid passage dating back to 2011 for comparison.

Please note that data contained in these reports is subject to revision as this data is preliminary and undergoing QA/QC procedures.

If you have any questions, please feel free to contact me at (530) 527-3043 ext 243.

Table 1.— Preliminary estimates of passage by brood-year (BY) and run for unmarked juvenile Chinook salmon and steelhead trout captured by rotary-screw traps at Red Bluff Diversion Dam (RK391), Sacramento River, CA, for the dates listed below. Results include estimated passage, peak river discharge volume, water temperature, turbidity, and fork length (mm) range in parentheses. A dash (-) indicates that sampling was not conducted on that date.

Date	Discharge volume (cfs) ¹	Water temperature (°C)	Water turbidity (NTU)	Estimated passage				
				BY17 Winter	BY17 Spring	BY17 Fall	BY17 Late-Fall	BY18 RBT
3/12/2018	4,439	12.4	2.7	55 (115 – 120)	55 (70 – 84)	166 (34 – 43)	0 (–)	0 (–)
3/13/2018	4,439	12.6	3.3	0 (–)	56 (79 – 85)	196 (34 – 37)	0 (–)	0 (–)
3/14/2018	7,383	11.3	3.6	0 (–)	148 (83 – 83)	586 (33 – 38)	0 (–)	0 (–)
3/15/2018	11,928	9.8	15.5	6,067 (95 – 167)	3,634 (69 – 84)	6,967 (35 – 66)	0 (–)	0 (–)
3/16/2018	14,842	9.2	30.3	8,847 (90 – 156)	8,041 (68 – 86)	21,397 (33 – 66)	0 (–)	0 (–)
3/17/2018	13,299	9.7	39.6	2,031 (93 – 151)	0 (–)	13,009 (31 – 62)	0 (–)	0 (–)
3/18/2018	7,608	10.2	13	354 (96 – 100)	1,922 (69 – 86)	2,050 (36 – 67)	0 (–)	0 (–)
3/19/2018	5,910	10.8	7.1	0 (–)	413 (68 – 84)	1,248 (33 – 65)	0 (–)	0 (–)
3/20/2018	5,373	11.1	5	0 (–)	69 (72 – 76)	688 (31 – 68)	0 (–)	35 (28)
3/21/2018	5,375	10.9	3.8	36 (95)	166 (70 – 92)	140 (36 – 69)	0 (–)	0 (–)
3/22/2018	12,480	11.8	6.6	244 (112 – 115)	554 (70 – 86)	436 (31 – 66)	0 (–)	145 (67)
3/23/2018	20,126	10.8	–	–	–	–	–	–
3/24/2018	11,983	10.1	57.2	1,114 (109 – 142)	4,140 (71 – 91)	12,212 (29 – 70)	0 (–)	0 (–)
3/25/2018	8,695	10.0	15.2	0 (–)	1,348 (72 – 81)	2,300 (41 – 67)	0 (–)	0 (–)
Biweekly Total ²				18,980	21,661	64,232	0	210
<i>Biweekly Lower 90% Confidence Interval</i>				3,449	4,832	13,574	0	-9
<i>Biweekly Upper 90% Confidence Interval</i>				34,512	38,490	114,891	0	429
Brood Year Total				479,843	165,655	313,871	78,325	609
<i>Brood year Lower 90% Confidence Interval</i>				321,832	107,603	141,069	24,054	-219
<i>Brood year Upper 90% Confidence Interval</i>				637,855	223,707	486,673	132,595	1,437

¹ Peak daily discharge values do not account for diversions at RBDD and only represent peak flows registered at the Bend Bridge Gauging station (<http://cdec2.water.ca.gov/cgi-progs/queryFx?bnd>).

² Biweekly totals may be greater than the sum of the daily estimates presented in this table if sampling was not conducted on each day of the biweekly period. A dash (-) denotes those dates. To estimate daily passage for days that were not sampled, we impute missed sample days with the weekly mean value of days sampled within the week.

Juvenile Winter Chinook Salmon Estimated Passage

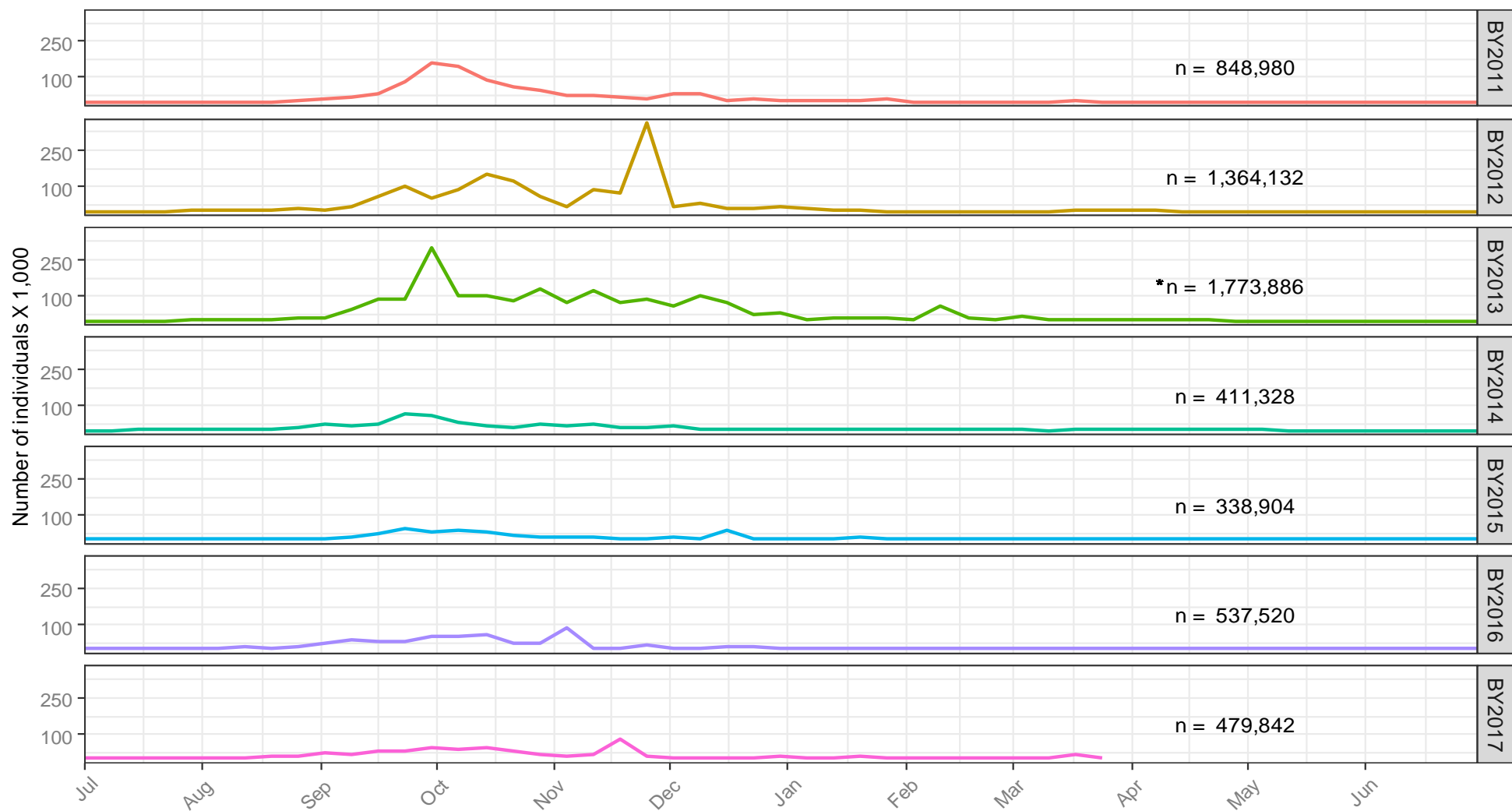


Figure 1. Weekly estimated passage of unmarked juvenile winter Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period July 1, 2011 to present .

*Winter run passage value interpolated using a monthly mean for the period October 1, 2013 - October 17, 2013 due to government shutdown .

Juvenile Spring Chinook Salmon Estimated Passage

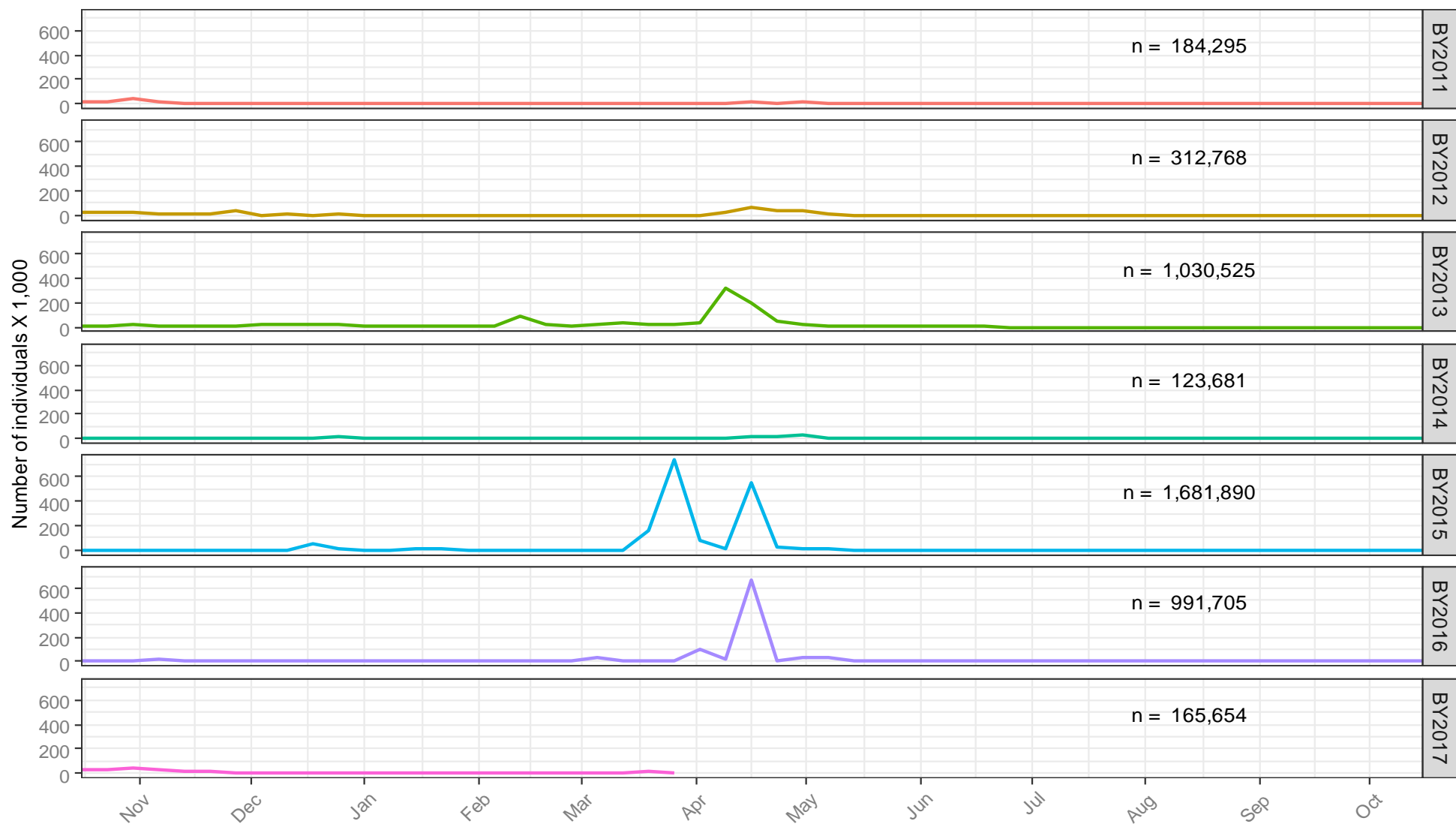


Figure 2. Weekly estimated passage of unmarked juvenile spring Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period October 16, 2011 to present .

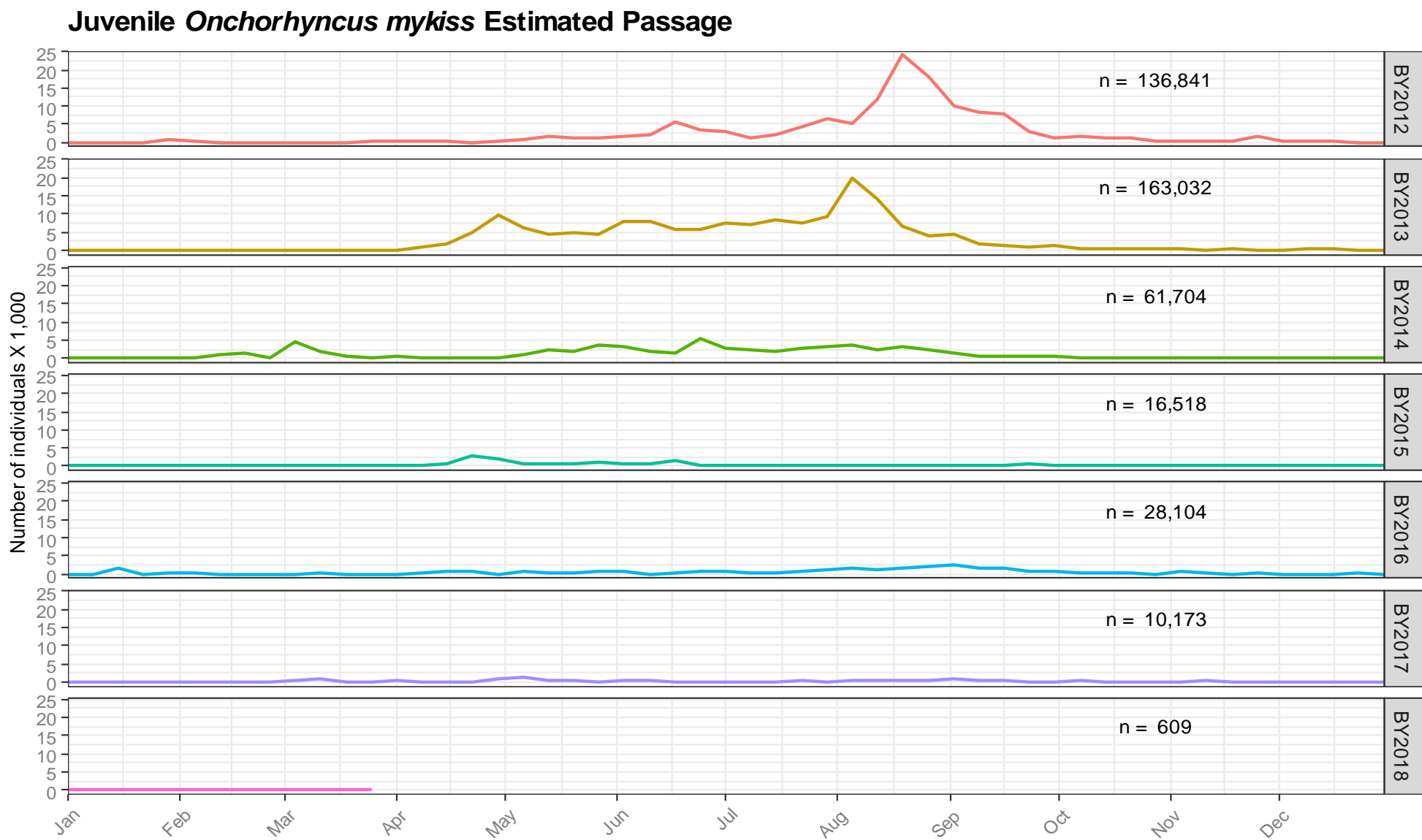


Figure 3. Weekly estimated passage of unmarked juvenile Rainbow/Steelhead trout at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period January 1, 2012 to present .

Juvenile Fall Chinook Salmon Estimated Passage

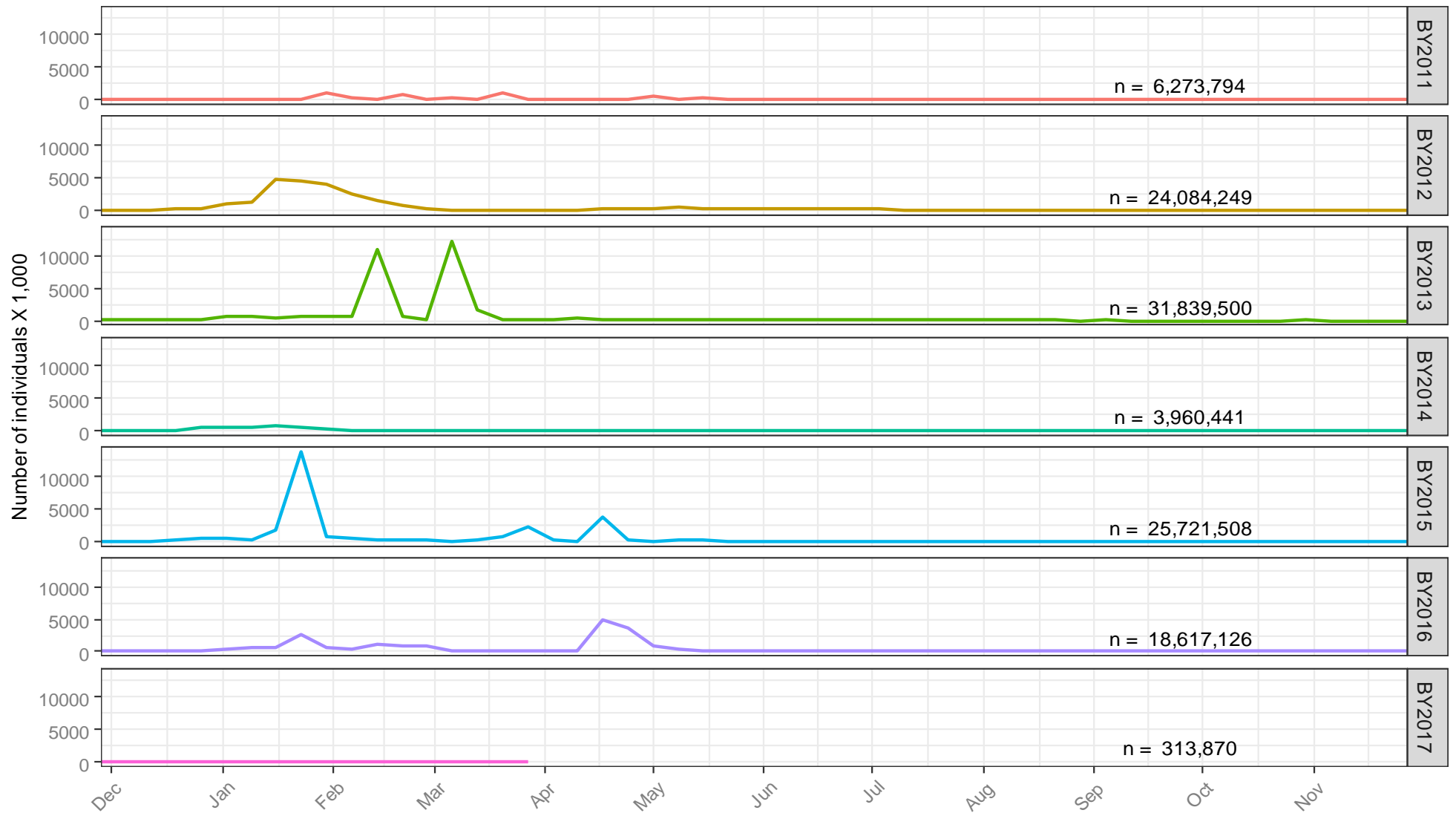


Figure 4. Weekly estimated passage of unmarked juvenile fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period December 1, 2011 to present .

Juvenile Late Fall Chinook Salmon Estimated Passage

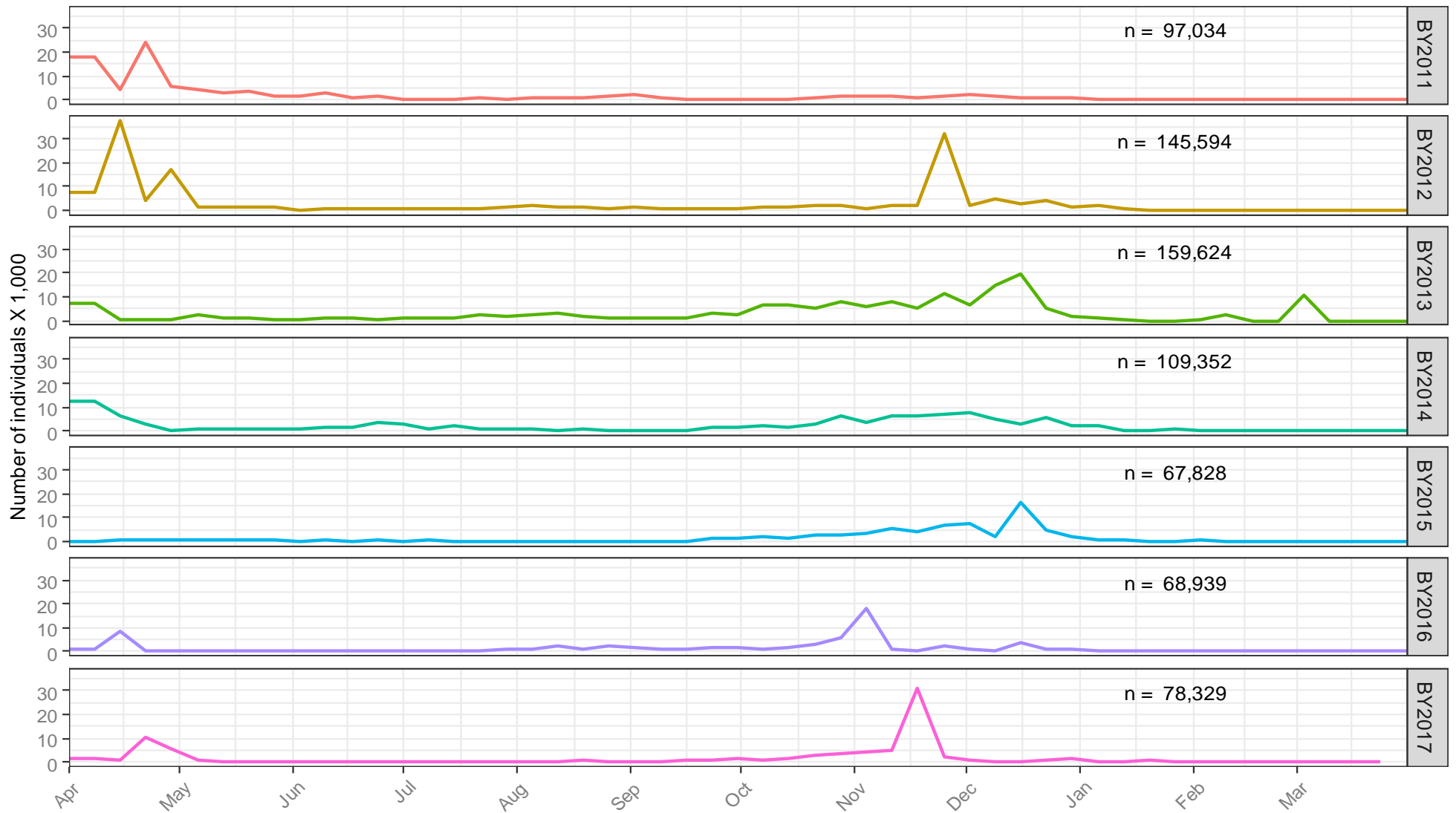


Figure 5. Weekly estimated passage of unmarked juvenile late fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period April 1, 2011 to present .

Weekly Estimated Chinook Passage at Red Bluff Diversion Dam - All Runs Combined

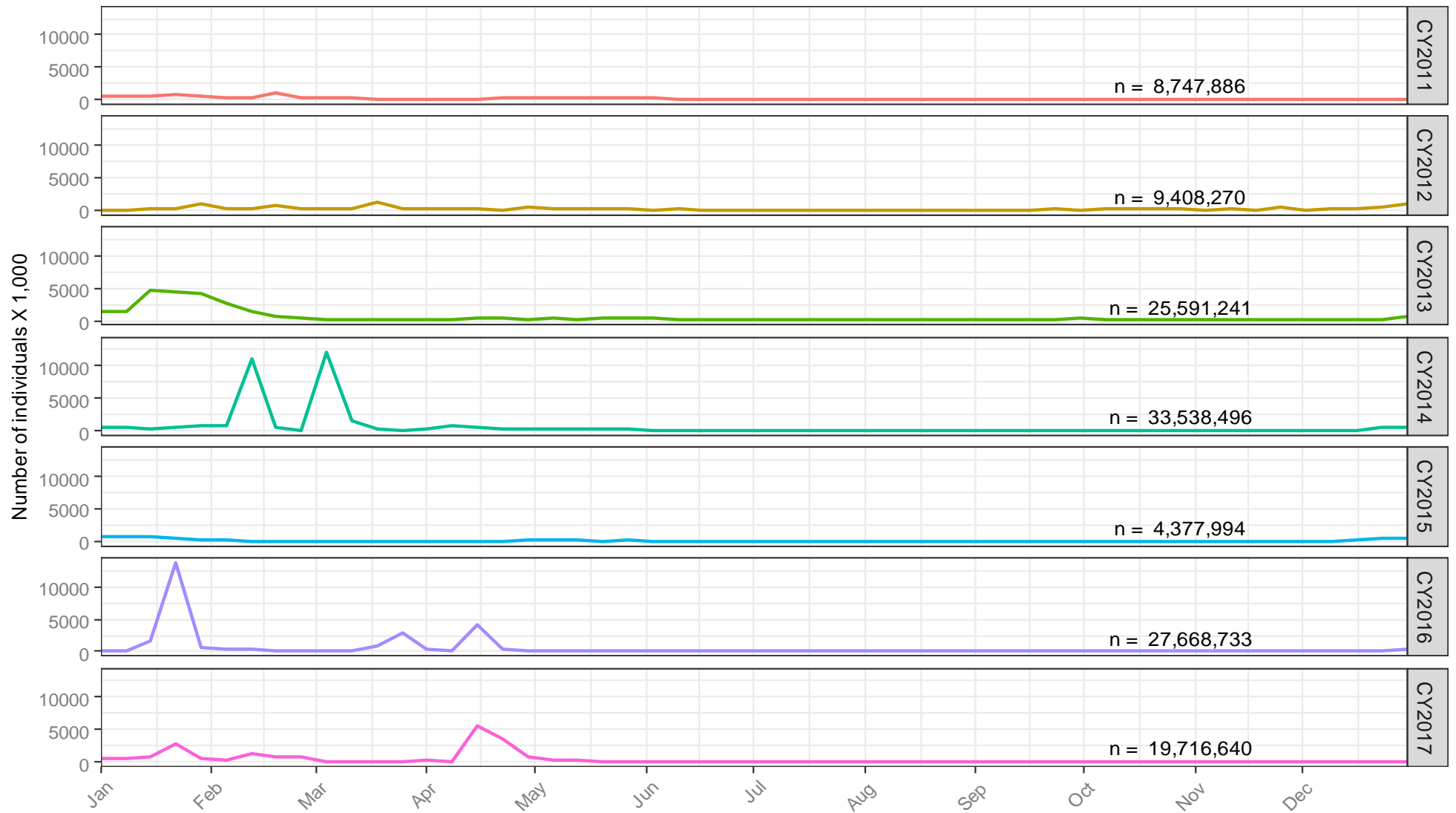


Figure 6. Weekly estimated passage of unmarked juvenile Chinook salmon at Red Bluff Diversion Dam (RK391) by calendar year. Fish were sampled using rotary-screw traps for the period January 1, 2011 to December 31, 2017